C. S. CRANE & W. H. LAVINIA.

Improvement in Steam Hoisting Apparatus.

No. 128,466. Patented July 2, 1872.

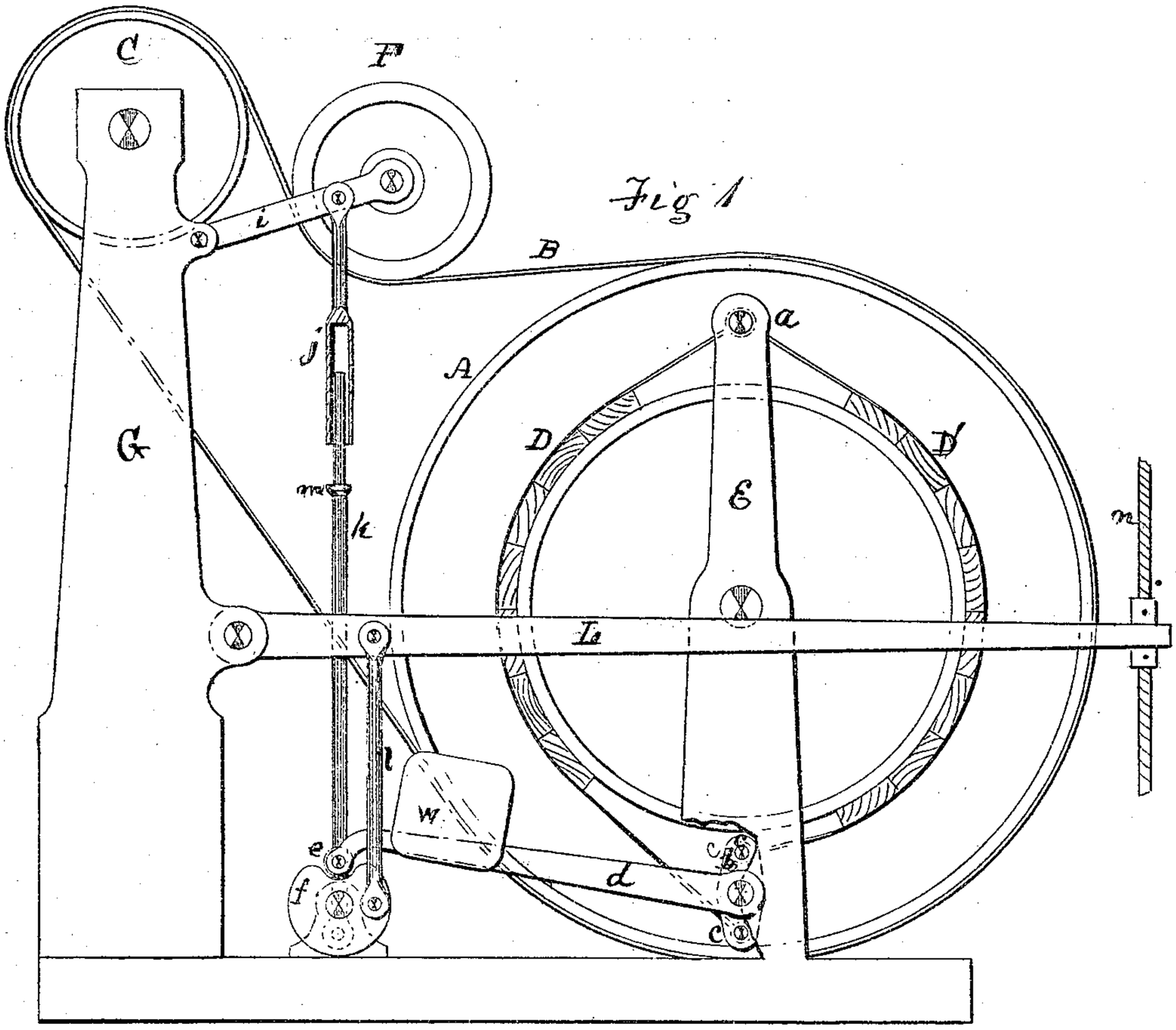


Fig 1

Fig 2

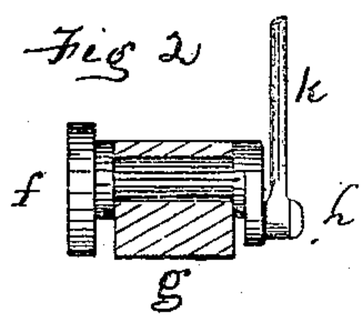
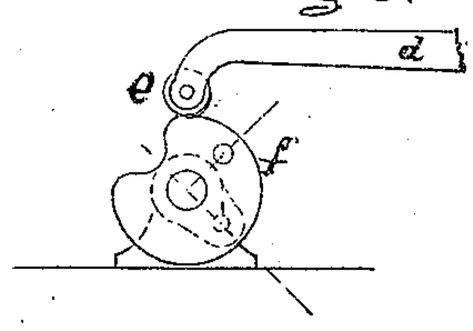


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES S. CRANE AND WILLIAM H. LAVINIA, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN STEAM-HOISTING APPARATUS.

Specification forming part of Letters Patent No. 128,466, dated July 2, 1872.

SPECIFICATION.

We, CHARLES S. CRANE and WM. H. LAVINIA, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Steam-Hoisting Apparatus, of which the following is a full description, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a side elevation, and Figs. 2 and 3 details.

The object of our invention is to provide a means whereby the brake in use with the apparatus will be automatically applied in case of accidents, and can also be readily applied by the operator.

In the drawing, A represents the driving-pulley; B, belt; C, pulley, from which the power is communicated to A; D D′, brake, placed upon the pulley A in the usual manner, the two parts of the brake being secured at the point *a*, and the lower ends being connected at *c c* to a cross-bar *b*, permanently secured to the lever *d*. *w* is a weight, which can be placed wherever desired on *d;* E, one of the standards, in which the shaft of the driving-pulley and drum revolves. The cross-bar *b* is on the inside of this standard E, and the lever *d* upon the outside, the two being connected by a rod passing through the standard. *e* is a friction-roller in the end of *d*. *f* is a heart-shaped cam, secured to a rod, which passes through a bearing, *g*, upon the other end of which rod is a crank or wrist-pin, *h*, see Fig. 2. L is the reversing-lever; *l*, bar, pivoted to the cam *f* and lever L; F, a heavy pulley, suspended in bearings at the ends of the arms *i*, which are pivoted to the standards G. F rests upon and revolves with the belt B. *j* is a rod, hollow at the lower part, and pivoted at its upper end to the arm *i*. *k* is another rod, upon which is a shoulder, *m;* that part of this rod above the shoulder *m* telescopes in *j*, and the lower end of *k* is connected with the wrist-pin *h; n*, cable, for operating the lever L, which is connected with the steam-valve in the usual manner, not represented in the drawing. The levers L *d*, and cam *f* are represented in the position in which they will be when the brake is applied, the steam being shut off. If the lever L be raised opening the steam-valve, the rod *l* will move the heart-shaped cam *f*, which will lift up the end of the lever *d*, bringing the cam and lever *d* into the position represented in Fig. 3, and releasing the brake; and when the steam is again shut off the rod *l* will bring the cam *f* and lever *d* back into the position shown in Fig. 1, again applying the brake.

If, by accident, the belt B should break when the steam is on, and the cam *f* and lever *d* are in the position represented in Fig. 3, the weight of F will force the rod *j* down onto the shoulder *m*, immediately turning the cam by means of the rod *k*, bringing the parts *f* and *d* into the position shown in Fig. 1, and applying the brake. If the lever L be lowered instead of being raised, the operation will be similar to that above described, the other side of the cam raising the lever *d*, as the rod *l* is so pivoted to the cam that it will operate to throw the lever *d* up when the lever L is moved either up or down. The pulley F also serves the purpose of a belt-tightener. The pulley F and parts connected therewith may be used with advantage in stops which are not automatic.

What we claim as new is as follows:

1. The cam *f*, weighted lever *d*, and rod *l*, in combination with the bar *b*, brake D, and reversing-lever L, substantially as and for the purposes specified.

2. The cam *f*, weighted lever *d*, rods *l k j*, in combination with the bar *b*, brake D, tightening-pulley F, and reversing-lever L, all constructed substantially as and for the purposes specified.

3. The tightening-pulley F, rods *j k*, and cam *f*, in combination with the weighted lever *d*, bar *b*, and brake D, substantially as and for the purposes specified.

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